



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/664,277

09/17/2003

Nicolay Y. Kovarsky

AMAT/7735/CMP/ECP/RKK

3455

44257 7590 01/18/2007

PATTERSON & SHERIDAN, LLP

3040 POST OAK BOULEVARD, SUITE 1500

HOUSTON, TX 77056

EXAMINER

SMITH, NICHOLAS A

ART UNIT

PAPER NUMBER

1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

01/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/664,277

Applicant(s)

KOVARSKY ET AL.

Examiner

Nicholas A. Smith

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Please see p. 6, lines 18-21 of Applicant's Remarks submitted 20 December 2006.

Status of Claims

2. Claims 1-12 and 15-17 remain for examination. Claims 13-14 and 18-21 have been cancelled.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1 and 9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 38 of copending Application No. 10/268,284 in view of Bacon et al. (US Patent 4,466,864).

Art Unit: 1742

4. US'284 discloses for instant claim 1:

- An electrochemical plating cell, comprising: a fluid basin configured to contain a plating solution; an anode fluid volume positioned in a lower portion of the fluid basin is disclosed in claim 38 of copending Application No. 10/268,284.
- A cathode fluid volume positioned in an upper portion of the fluid basin is disclosed in claim 38 of copending Application No. 10/268,284.
- an ionic membrane positioned to separate the anode fluid volume from the cathode fluid volume is disclosed in claim 38 of copending Application No. 10/268,284.
- a plating electrode centrally positioned in the anode fluid volume is disclosed in claim 38 of copending Application No. 10/268,284.
- a plating electrode comprises a disk member having a plurality of parallel slots formed therethrough, the plurality of parallel slots comprises a plurality of longer segments and a plurality of shorter segments is disclosed in claim 38 of copending Application No. 10/268,284.

5. US'284 discloses for instant claim 9:

- An electrochemical plating cell, comprising: an anolyte compartment is disclosed in claim 38 of copending Application No. 10/268,284.
- a catholyte compartment positioned in ionic communication with the anolyte compartment via a cationic membrane is disclosed in claim 38 of copending Application No. 10/268,284.

Art Unit: 1742

- an anode positioned in the anolyte compartment is disclosed in claim 38 of copending Application No. 10/268,284.
- an anode is a disk shaped member having a plurality of parallel slots formed therethrough, the plurality of parallel slots comprises a plurality of longer segments and a plurality of shorter segments is disclosed in claim 38 of copending Application No. 10/268,284.

6. In regards to claims 1 and 9, US'284 does not specifically disclose a deplating electrode positioned radially outward from the plating electrode in the anode fluid volume.

7. Bacon et al. teaches a deplating electrode positioned radially outward from the plating electrode (Figure 3, abstract, col. 4, lines 33-47). A modification of US'284 with Bacon et al.'s deplating electrode would place the deplating electrode in the anode fluid volume of US'284. It would have been obvious to one of ordinary skill in the art at the time of invention to modify US'284's electrochemical plating cell with Bacon et al.'s deplating electrode in order to electrolytically plate metal patterns on a semiconductor wafer (Bacon et al., col. 2, lines 47-59).

8. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 2-8, 10-12 and 15-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 38 of copending Application No. 10/268,284 (US'284) in view of Bacon et al. and further in view of Woodruff et al. (US Patent No. 6,497,801).

Art Unit: 1742

10. In regards to instant claims 2, 3, 8 and 10, Bacon et al. discloses an insoluble, platinum-coated anode and deplating electrode (col. 7, lines 13-16).

11. Furthermore, Woodruff et al. '801 teach an electroplating apparatus with multiple concentric anodes. The anodes are composed of titanium with a platinum coating (column 6, lines 3-5). It would have been obvious to one of ordinary skill in the art at time of the invention to modify the plating cell of US'284 in view of Bacon et al. by replacing one or both of the copper anodes with insoluble platinum-coated anodes as taught by Woodruff et al. '801, in order to avoid the expense of replacing the consumable copper anodes as taught by Woodruff et al. 801 (column 5, line 66 to column 6, line 5).

12. In regards to claims 4-5, 11-12 and 15, US'284 in view of Bacon et al. and further in view of Woodruff et al. does disclose an auxiliary electrode positioned to circumscribe the central inert anode and that they are in substantially the same plane both with substantially planar upper surfaces or a deplating electrode that would be vertically movable relative to the upper surface of the anode, and an insulative spacer positioned between the disk-shaped electrode and the annular electrode (Bacon et al., Figure 3, abstract, col. 4, lines 33-47, col. 7, lines 31-36). It is noted that gap 66 (Figure 3) of Bacon et al. acts an insulative spacer in that plating and deplating electrode are held at difference potentials.

13. Regarding claims 6, 7, 16 and 17, Bacon et al. teaches that the power supply (Figure 3, 71) is configured to individually address each electrode and provide a

Art Unit: 1742

different amount of current to each one with appropriate biases (abstract; col. 4, line 48 to col. 5, line 15; and Figure 3).

14. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

15. The following is a statement of reasons for the indication of allowable subject matter:

16. The feature of the plating electrode comprises a disk member having a plurality of parallel slots formed therethrough, the plurality of parallel slots comprises a plurality of longer segments and a plurality of shorter segments is a patentable feature. Prior art only suggests disk anodes, torrodial anodes, or perforated anodes. The instantly claimed, slotted anode would provide a substantially different flow-field than the flow-field produced by its closest prior art counterpart, a perforated anode (or a perforated diffuser plate or membrane). The applicant has provided a sufficient disclosure for supporting the need for such a flow-field on pages 8-9 of the instant specification.

Therefore, independent claims 1 and 9, as well as dependent claims 2-8, 10-12 and 15-17 would be allowed subject matter if the double patenting rejection were overcome.

Response to Arguments

Applicant's arguments with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Art Unit: 1742

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS


ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700